

Notice of Allowability

Application No.

10/626,579

Applicant(s)

THOMPSON ET AL.

Examiner

Marie R. Yamnitzky

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's Amendment received 19 August 2005.
2. ☒ The allowed claim(s) is/are 1-3, 5, 8-17 and 19-21 (renumbered as 1-17, respectively).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 10252005.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

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An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for the examiner's amendment to the claims was given in a telephone interview with Alan Force on October 25, 2005. (The spelling correction to the specification was not discussed.)

The specification has been amended as follows:

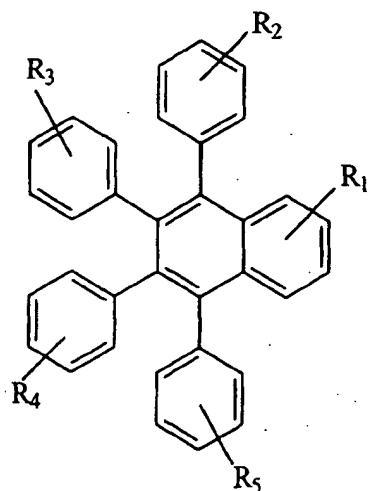
Paragraph [00047], line 7: "tranport" has been changed to --transport--.

Claims 10 and 12 have been amended as follows. (The text of claims 1-3, 5, 8, 9, 11, 13-17 and 19-21 remains as set forth in the amendment received August 19, 2005.)

10. (Currently Amended) The device of claim 1, wherein the first organic layer comprises a hole transporting material, wherein the aromatic hydrocarbon material has a highest occupied molecular orbital that is not more than 0.81 eV less than the highest occupied molecular orbital of a hole transporting material in the first organic layer.

12. (Currently Amended) A device, comprising: an anode; a cathode; a first organic layer disposed between the anode and the cathode, wherein the first organic layer comprises a

hole transporting material and a material that produces phosphorescent emission when a voltage is applied between the anode and the cathode; a second organic layer disposed between the first organic layer and the cathode, wherein the second organic layer is in direct contact with the first organic layer, and wherein the second organic layer comprises an aromatic hydrocarbon material having a highest occupied molecular orbital that is at least 0.81 eV less than the highest occupied molecular orbital of a hole transporting material in the first organic layer, wherein the aromatic hydrocarbon material has the structure



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wherein: R₁-R₅ each represent no substitution, mono-, di-, or tri-substitution, and wherein the substituents are the same or different, and each is selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroalkyl and substituted aryl.

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Applicant's amendment received August 19, 2005 overcomes the issues raised in the rejections under 35 U.S.C. 112, 1st and 2nd paragraphs, as set forth in the Office action mailed May 31, 2005, as well as the rejections under 35 U.S.C. 102(b), 102(a), and 103(a), and some of the miscellaneous issues.

It is the examiner's position that with the amended language of claims 10 and 12 as set forth in the August 19th amendment, it is unclear whether the device as claimed in claims 10-13 requires a hole transporting material in the first organic layer. Claims 10 and 12 are amended by this examiner's amendment to overcome this issue.

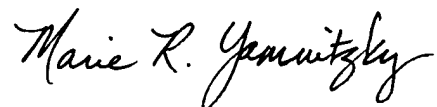
The provisional rejections based on copending Application No. 10/785,287 are withdrawn in accordance with MPEP 822.01.

No amendment has been made to the specification to address the miscellaneous issue raised in the May 31st action regarding the differing descriptions of substituents as set forth in the abstract and various paragraphs, but the examiner notes that this issue does not affect the patentability of the claims, so no amendment is necessary.

Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
October 25, 2005



MARIE YAMNITZKY
PRIMARY EXAMINER

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